

ABSTRACT

An occupant safety restraint system ("OSR system") (10) and method for fully deploying an airbag (20) before an occupant contacts the airbag (20). In one embodiment, the OSR system (10) includes a seatbelt restraint system (12), a variable-output airbag system (14), and a controller (16) coupled to the seatbelt restraint system (12) and the airbag system (14). The seatbelt restraint system (12) includes a seatbelt restraint (24) for restraining the occupant and a seatbelt-tension sensor (28) for detecting a load or tension in the seatbelt restraint (24). The controller (16) utilizes the seatbelt load for determining a current seatbelt-tension rate and actuating the airbag system (14) to deploy the airbag (20) at one or more output rates. In other words, the controller (16) can utilize the seatbelt restraint system (12) and the airbag system (14) in combination for regulating the output rate of the airbag system (14).